13-10: Develop and implement a plan of action to make ice charts, likely in SIGRID-3 format, available in WIS.
Responsibility: Vasily Smolyanitsky, Sean Helfrich, Jürgen Holfort
Due Date: Long Term
Status: CLOSED. An update on WIS was provided by WMO at IICWG-XV. At IICWG-XVI, the option to make ice charts data available through the Global Cryosphere Watch was discussed. This is still under active investigation by Vasily. To be reopened if WMO requests more information on it.

15-7: Nominate individuals to liaise with the JCOMM Expert Team on Operational Ocean Forecasting in development of The Guide, Observation Requirements, Performance Monitoring, and Data Assimilation. (Ref: Action 14-5)
Responsibility: Science Committee Co-chairs
Due Date: November 30, 2015
Status: OPEN. The ET-OOFS Operational Ocean Forecasting System Guide is to be published and presented at the JCOMM-5 meeting to be held from 25 - 31 October 2017, Jakarta, Indonesia. An earlier draft of the guide does contain a “Sea-Ice Forcings” section which notes “need more details from Sea-Ice modelers”. Dean Flett has written to Fraser Davidson, leader of ET-OOFS to determine what more is needed from IICWG and ice modellers. A new action 18-1 was raised to bring this issue to JCOMM.

15-15: NIS to share the software they have developed for the open source QGIS if requested by other ice charting organizations.
Responsibility: Nick Hughes
Due Date: When requested
Status: CLOSED and On-going. The NIS QGIS system "BiFrost" was used by participants from a number of ice services at the 5th and 6th Ice Analysts Workshops. NIS is willing to share the software upon request.

15-16: Undertake an inventory of capability in the Southern Ocean METAREA Preparation Services.
Responsibility: Vasily Smolyanitsky, Scott Carpenter
Due Date: On-going
Status: OPEN

15-18: Investigate models of service delivery that would be appropriate for the Antarctic and report to IICWG-XVI.
Responsibility: Scott Carpenter
Due Date: IICWG-XVI
Status: CLOSED. A workshop was held at IICWG-XVIII to help Scott gather information on this topic. His position at BOM will allow him to address this further.
IICWG PLENARY ACTION ITEMS

Updated - December 9, 2017

16-5: Canvass captains of Antarctic ships to get an initial assessment of POLARIS as being applicable to Antarctic ice conditions. British Antarctic Survey to include their POLARIS feedback
Responsibility: Neal Young, Alvaro Scardilli, Roberto Diaz, Keld Qvistgaard
Due Date: IICWG-XIX
Status: OPEN. Alvaro has produced a brief summarizing comments from 8 Argentine captains who deploy every summer to Antarctica. Roberto provided additional comments from vessels in Punta Arenas. This is not a “one-shot” survey but should be continuing dialogue and should be the subject of a discussion/session at IICWG-XVIII.

17-1: Promote the availability of ice charts in S-411 format with the ECDIS manufacturers.
Responsibility: Jürgen Holfort
Due Date: IICWG-XIX
Status: OPEN. Recently, this has been gaining some momentum because S-412 (meteorological data) is an attractive addition to include in the ECDIS.

17-2: In consultation with COMNAP and IAATO, identify gap areas that exist around Antarctica where Near-Real-Time processing and delivery of products will coincide with the time of actual approach and passage of ships through ice, and times of deployment of field experiments. Convey this information to ESA.
Responsibility: Andrew Fleming, Neal Young, Scott Carpentier, Alvaro Scardilli, Pip Bricher, Secretariat
Due Date: IICWG-XIX
Status: OPEN. John is to investigate how best to convey the information to ESA (e.g. is there a database that would be suitable? SOOS DueSouth product?).

17-5: Explore the idea of including Ice Service point of contact information as a required element of the Polar Code Polar Waters Operating Manuals. Prepare a recommendation for the IICWG to consider sending to the IMO.
Responsibility: Dave Jackson
Due Date: Dec 31, 2017
Status: OPEN.

17-6: Ice Services that are establishing YOPP “Desks” or undertaking other YOPP activities to report these activities to IICWG via the secretariat so that all can remain coordinated.
Responsibility: Ice Service Heads
Due Date: IICWG-XVIII
Status: CANCELED.

17-7: Form an IICWG Task Group to participate in the continued development of POLARIS particularly with respect to its applicability in the Southern Ocean.
Responsibility: Dave Jackson, Secretariat
## IICWG PLENARY ACTION ITEMS

**Updated - December 9, 2017**

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**17-10:** Standing Committee Co-Chairs to call quarterly teleconferences of their committees and send brief updates to the secretariat following these teleconferences. Secretariat to have updates posted on the IICWG website.

| Responsible: Standing Committee Co-Chairs, secretariat |
|-------------|-----------------------------------------------------|
| Due Date: Quarterly |
| Status: CANCELLED. |

**17-12:** Produce a draft Strategic Vision document for the IICWG. As background, should consider strategic plans from individual ice services as well as the North American Ice Service and the European Ice Services. The vision should also include a strategy for engagement with all stakeholders.

| Responsible: Dave Jackson, Ruth Lane, Kristen Serumgard, Andrew Fleming, Alvaro Scardilli |
|-------------|--------------------------------------------------------------------------------------------|
| Due Date: When the draft is approved, this can be closed. |
| Status: OPEN. A first draft vision was circulated at IICWG-XVIII and comments solicited from the participants. The team will revise accordingly and distribute again. |

**18-1:** Develop a briefing note for Tom Cuff so he can raise the issue of ice input for the ET-OOF Guide on Operational Ocean Forecasting at JCOMM-V (25-29 October 2017). Tom to report back to IICWG following JCOMM-V.

| Responsible: Phil Reid, Secretariat, Tom Cuff |
|-------------|---------------------------------------------|
| Due Date: Briefing note required by October 15 |
| Status:                                             |

**18-2:** Ice Services to investigate Passive Microwave Radiometer data from the Chinese FY-3 and U.S. JPSS satellites to determine their usefulness for operations.

| Responsible: Nick Hughes (Met No), Caryn Panowicz |
|-------------|--------------------------------------------------|
| Due Date: April 30, 2018 |
| Status:                                              |

**18-3:** Write a letter to ESA regarding the potential Passive Microwave Radiometer data gap and informing them of our concerns and intentions re: FY-3 and JPSS.

| Responsible: Secretariat, Co-chairs |
|-------------|-------------------------------------|
| Due Date: Nov 30, 2017 |
| Status:                                              |

**18-4:** Give feedback to Penny Wagner and Petra Heil regarding the “Sea-ice Best Practices under the WMO Global Cryosphere Watch’s CryoNet” report for the Polar Space Task Group meeting in November, 2017.

| Responsible: IICWG participants |
|-------------|---------------------------------|
| Due Date: 15 October 2017 |
| Status:                                              |
18-5: Data Committee to hold “early scoping” discussions on the differences in Cryonet and GCW observing methodologies that can be captured in the metadata.
   Responsible: Sean Helfrich
   Due Date: Dec 31, 2017
   Status:

18-6: Identify data layers for SOOSMap that the IICWG thinks should be available through the Southern Ocean Observing System.
   Responsible: Andreas Cziferszky, Pip Bricher
   Due Date: Dec 31, 2017
   Status:

18-7: Develop software to transform ASPeCT code to SIGRID-3 code. Work with the Data Committee to share the code.
   Responsible: Petra Heil, DICSSC Co-Chairs
   Due Date: July 2018
   Status:

18-8: Report on the JCOMM-5 outcome regarding the issue that GMDSS replacement is not addressing weather and ice information.
   Responsible: Tom Cuff
   Due Date: Nov 30, 2017
   Status:

18-9: Explore opportunities to collaborate with partners to address the challenges and opportunities of big data approaches to ice service operations.
   Responsible: Co-Chairs, Keld Qvistgaard
   Due Date: IICWG-XIX
   Status:

18-10: Initiate work to develop an international standard for Polar Code ice information products.
   Responsible: Keld Qvistgaard, Scott Graham, Jürgen Holfort, Caryn Panowicz
   Due Date: IICWG-XIX
   Status:

18-11: Investigate ways to encourage expedition ships to provide ice observations on the Global Telecommunications System.
   Responsible: Nick Hughes, Lisa Kelley, Kirsten Serumgard
   Due Date: April 2018
   Status:

18-12: Provide information about the Ice Logistics Portal to IAATO and AECO.
   Responsible: Secretariat
Due Date: Dec 31, 2018
Status:

18-13: All ice services to ensure that operational ice charts include ice concentrations and stages of development that are required for the Polar Code risk assessment.
Responsible: Ice Service Heads
Due Date: As soon as possible
Status:

18-14: IICWG to provide support to the Finnish chair of the Arctic Council to emphasize the importance of ice and the value of IICWG.
Responsible: Co-Chairs, Shanna Pitter
Due Date: on-going through 2017-2019
Status:

18-15: Identify gaps in the PAME Arctic Shipping Best Practices Forum portal and suggest ways to address them, including an extension to the Antarctic.
Responsible: Jürgen Holfort
Due Date: Dec 31, 2017
Status: Forum will occur in Spring 2018

18-16: IICWG to prepare a formal response to the IACS/POLARIS committee recommending resolution of issues for use of POLARIS in Antarctic waters.
Responsible: David Jackson and POLARIS Task Group
Due Date: July 2018
Status:

18-17: Report on trials/pilots to broadcast ice charts and/or information with the VHF Data Exchange System (VDES).
Responsible: Mike Hicks
Due Date: IICWG-XIX
Status: OPEN. This is linked to an Iceberg Committee action.

18-18: Send a letter to NOAA to encourage continued support for the IICWG website at NSIDC.
Responsible: Secretariat to draft for co-chairs
Due Date: Nov 30, 2017
Status:

18-19: Ice services to investigate the availability of historical ice concentration and stage of development data that could be put on the Arctic Shipping Best Practices Forum portal for use in Polar Code voyage planning and risk assessment.
Responsible: Jürgen Holfort, Ice Service heads
Due Date: March 2018
Status:
18-20: All committees to look into the parking lot items and advise on what should be kept.
   Responsible: Committee co-chairs
   Due date: IICWG-XIX
   Status:

18-21: Send a formal letter to the Nautical Institute indicating that the IICWG is interested in working with the NI to pursue the idea of standardized ice information training for mariners. Our work on ice analyst competencies may fit well with what should be taught to mariners and NI can help to structure what it should look like.
   Responsible: Dave Jackson, Secretariat to draft letter for co-chairs
   Due date: Nov 30, 2017
   Status:

18-22: Form a task group to develop a roadmap for IICWG engagement with the Arctic Council. Consider issuing a global challenge for Ice Services relating to big data/data processing for improving future ice charts to interest the large NGO foundations to help the Ice Services.
   Responsible: Shanna Pitter, Secretariat
   Due date: Dec 31, 2017
   Status: